be nuclei, and especially oval nuclei which are distinctly nucleated or granular. The most striking thing is the peculiar variety of cell as described by Langhaus, which are distributed in large numbers over the entire affected areas. They are called or considered by their discoverer as single and multi-locular white cells. The districts that are affected lay for the most part in the inner surface of the perineurium. They appear of the form of a cylindrical space or a segment of such a cylinder. Very seldom the affected areas lay within the bundles of fibres. The thickness of the affected area varied from 0.007 to 0.13 mm. The diameter of the affected bundles varied from 0.1 to 0.8. mm.

Affected areas were found in the hypoglossus, musculocutaneous, radial, median, ulnar, crural, ischiadic, and posterior tibial. As to the change in the central nervous system the author mentions that in the cortex of the cerebrum an ordinary degeneration was found. Everything went to prove that the dog previous to the beginning of the experiments was in a perfectly healthy condition. Concerning the lymphid infiltration in the neighborhood of the ganglionic cells as was described by Rogowitsch, the author can say nothing. In some places he found a swelling of the axis-cylinders, as, for instance, in the medulla oblongata, especially in the pyramids, in the fillet, in the olivary fibres, in the lateral acusticus bundles, and in some fibres of the formatio reticularis. A similar condition was found in the pyramidal bundles of the spinal cord. But as one went downward in the cord the swelling in the axis-cylinder became less apparent.—*Neuro. Centb.*, June 1, 1892. J. C.

MULTIPLE NEURITIS.

At the meeting of the Society of Internal Medicine of Berlin, held November 2, 1891, Fränkel reported three interesting cases of multiple neuritis.

1. A man, fifty years of age, an inebriate, presented concurrently with the ordinary symptoms of neuritis, a very marked amnesia.

He remarked that psychical symptoms are very infrequent in multiple neuritis, and should always be referred to a lesion of the cerebrum. In cases of this kind the general condition of the patient is habitually bad; there is much prostration. This was so in the case in question; the patient grew more and more feeble, and succumbed.

At the autopsy a deliquescence of the myeline of the peripheral nerves was found; the spinal cord was intact.

2. The second case was that of a young lad, aged fourteen years, of wretched appearance, who, besides paresis of the lower limbs and an ataxic gait, had complete paralysis of the left arm and atrophy of the paralyzed muscles; the case resembled one of progressive muscular atrophy.

3. A coachman of twenty-nine years presented himself with the symptoms of tuberculous neuritis very pronounced; there was also pulmonary tuberculosis. He had complete paralysis of the lower limbs, paresis of the upper limbs, hoarseness of voice from paralysis of the left vocal cord, and intense pains. Under a full nourishing diet and cod-liver oil he got better of the nervous symptoms, but his pulmonary disease went on from bad to worse.

The same speaker also reported a case which he regarded as a case of locomotor ataxia, but which his colleague Remak diagnosticated as multiple neuritis; the diagnosis continued to be very obscure.

Goldscheider remarked that the participation of the cranial nerves in the lesions of multiple neuritis is very uncommon. In one of his patients he observed a lesion of the motor oculi, in another a tachycardia due to participation of the pneumogastric, and ulteriorly a left optic neuritis. This patient got well.

Remak referred to the case diagnosticated by Fränkel as tabes, but considered by himself as multiple neuritis (*vide supra*). The patient had since completely recovered. This result confirmed his diagnosis.

Leyden closed the discussion by saying that the clinical picture of multiple neuritis is accepted in science as he presented it twelve years ago.

In his first memoir he took stand against the dogmatic distinction established between the peripheral and central system as far as concerns their relations with multiple neuritis; the toxic agent may influence immediately both systems. According to his own observations, the anatomical lesions of the central system affect only the ganglionic cells; there may also be *focal* lesions of the gray substance, but he has not thus far met with lesions of the white substance.

It is difficult any longer to establish a clear separation between the nerves and the muscles, as the muscles may also be primarily affected with myositis.

The anatomical lesions of the nerves in cases of multiple neuritis present three varieties: 1. We may meet with abundant proliferation of cells and effusion into the nervous substance and into the sheath. 2. There may be a degeneration of the nerves with disappearance of the myeline. This is also an inflammatory form.

3. Lastly, according to his observations, acute ascending paralysis ought to be classed with multiple neuritis. He believes that the toxic agent first disturbs the functions; the material degenerations follow.

He does not know whether the neuritis may ever extend to the spinal cord. He does not know of any case in which a tabes or a myelitis has immediately followed a multiple neuritis. It is not impossible but that such cases may yet be witnessed.

The diagnosis may be difficult in alcoholic neuritis. It is probable that a great many cases of tabes reported as cured belong to the category of multiple neuritis.

E. P. H.

PHOSPHORUS POISONING.

(British Med. Jour., Dec. 19, 1891.) Elkins and Middlemass report the case of a lady, aged thirty-four, who suffered from mental depression, but was otherwise intelligent and coherent in conversation and had a good memory. After sucking the phosphorus ends of two boxes of matches, she died in about one hundred hours. Briefly, the mental symptoms were in order of appearance: Listlessness, drowsiness, restlessness, mental confusion, inability to understand what was said, inability to answer questions readily or correctly, inability to recognize friends, semi-consciousness, semi-delirium, delirium, fits of great restlessness, and violence, constant use of the word "yellow" when delirious, maniacal expression and behavior, coma.

Sensory symptoms: "Rheumatic pains," blindness (?)

Motor symptoms: Thick and drunken-like speech, pupils fixed and dilated, external strabismus of left eye. The pathological interest of the case lies in the changes in the nerve cells of the cortex. Sections of the cortex showed fatty particles in the walls of the larger capillaries and fatty granules in the larger nerve cells, most pronounced in the fourth layer. The authors state that the power of phosphorus to cause fatty degeneration in nerve cells has lately been denied, but that this case